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FEASIBILITY STUDY

Wilmington
SR 1409 (Military Cutoff Road)
from US 74 (Eastwood Road) to US 17
New Hanover County

U-2734

Prepared by
Program Development Branch
Division of Highways
N. C. Department of Transportation



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Date

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I. GENERAL DESCRIPTION

This is a Feasibility Study for the widening of SR 1409 (Military Cutoff Rd.) from US 74 (Eastwood Rd.) to US 17, a distance of approximately 2.2 miles. The studied roadway is located in northeast Wilmington (see the attached location map). The recommended improvements include widening the existing two-lane portion of SR 1409 to a five-lane, 64-foot curb and gutter section. The recommended right-of-way width is 120 feet, with no control of access. The estimated cost of the recommended improvements is \$ 4,412,000 (\$ 712,000 for right-of-way, and \$ 3,700,000 for construction).

This study is not a detailed planning/environmental investigation. A feasibility study presents recommended typical cross sections, general alignments, and estimated cost of the improvement. The study also attempts to provide an early identification of potential environmental, permitting, or other issues which deserve consideration in the planning and construction stages.

II. EXISTING CONDITIONS & NEED FOR PROJECT

This project was requested by Division 3. SR 1409 (Military Cutoff Rd.) is classified as an Other Urban Principal Arterial in the statewide functional classification system, and is a part of the federal-aid system (FAU 121-1). It is classified as a major thoroughfare in the 1985 mutually adopted Wilmington Thoroughfare Plan.

The southern terminal of this study is at the north end of the 0.2 mile, multilane portion of SR 1409 (see the attached location map). This portion of SR 1409 forms the northern approach to the US 74 signalized intersection and it consists of a 72-foot curb and gutter section (two through lanes per direction, plus a right, and a left-turn lane on the southbound side). This 0.2 mile portion tapers north into the two-lane, 2.2 mile segment of SR 1409 which is the subject of this report.

The northern terminal of this study is at US 17. US 17 at this location consists of a five-lane shoulder section, and is intersected by SR 1409 at an acute angle.

The studied portion of SR 1409 consists of a two-lane, 22-foot pavement with 4-foot usable shoulders. Existing right-of-way width is 100 feet, with no control of access.

Detailed traffic estimates, and turn-movement counts were unavailable for this study. However, based on earlier traffic counts, it is estimated that the average daily traffic (ADT) currently using SR 1409 is 16,000 vehicles per day (vpd).

Under current conditions, and estimated traffic demand, the two-lane portion of SR 1409 is operating at capacity, or level-of-service (LOS) E during the peak hour. With the recommended widening to five lanes, and an estimated ADT of 16,000 vpd, the roadway would operate at LOS C in the peak hour. The recommended five-lane section would reach its traffic carrying capacity during peak periods at approximately 28,000 vpd.

During the period from January 1988 to December 1990, a total of 88 accidents, including 1 that resulted in a fatality, were reported on the studied portion of SR 1409. Of these 88 accidents, 34 involved rear-end collisions, 23 involved turning vehicles, and 18 involved angle collisions. The total accident rate for the studied roadway was 197.0 accidents per 100 million vehicle-miles, compared to a statewide accident rate for similar facilities of 366.4 accidents per 100 million vehicle-miles.

At the present, land adjacent to SR 1409, is mainly vacant, with commercial development at both termini of the project. However, it is expected that extensive residential, and commercial planned development will take place in the near future.

The recommended widening is needed to accommodate current traffic demand, and the anticipated growth due to increasing, and rapid land development. SR 1409 also carries traffic from I-40 to Wrightsville Beach, provides access to the Wilmington ports, and by paralleling College Road (NC 132), it provides an alternate to that congested thoroughfare.

III. RECOMMENDATIONS

It is recommended that the 2.3 mile, two-lane portion of SR 1409, from the multilane portion north of US 74 to US 17 be widened to a five-lane, 64-foot curb and gutter section with 8-foot berms. The widening is to be carried out symmetrically about the existing roadway. The recommended right-of-way width is 120 feet to accommodate the curb and gutter section, and drainage easements if needed. The 120-foot right-of-way width will also accommodate a future seven-lane section. No control of access is recommended. It is also recommended that the intersection with US 17 be improved through channelization.

IV. COST ESTIMATE

The estimated cost of the recommended improvements is:

Right-of-way and Utilities	\$ 712,000
Construction	\$ 3,700,000
Total	\$ 4,412,000

V. OTHER COMMENTS & CONCERNS

The following is a list of other studies or programmed projects in the vicinity of SR 1409 (see the attached location map):

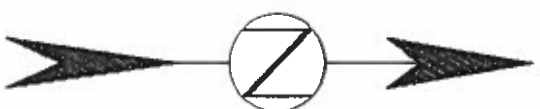
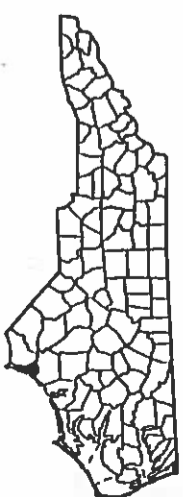
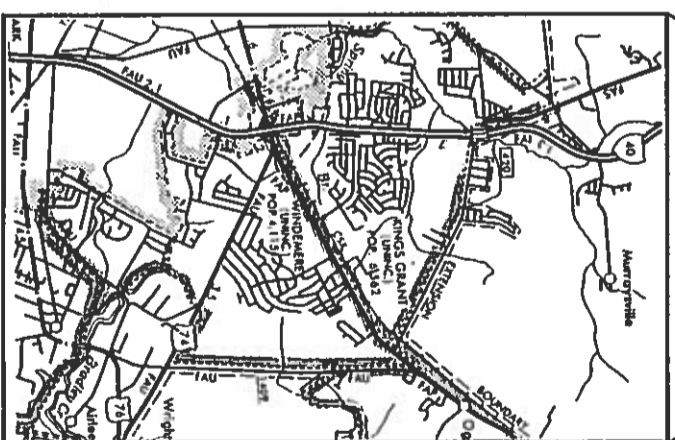
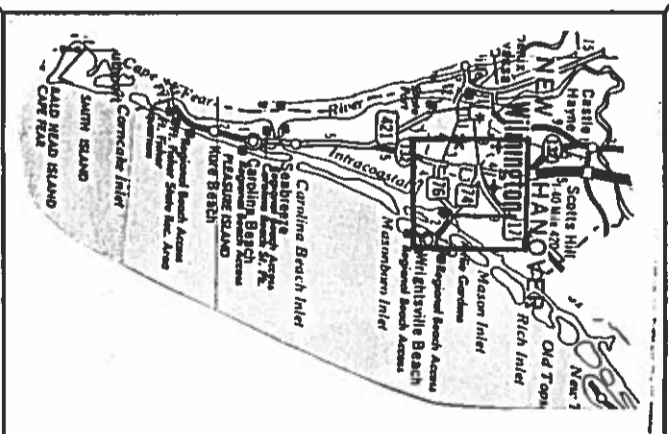
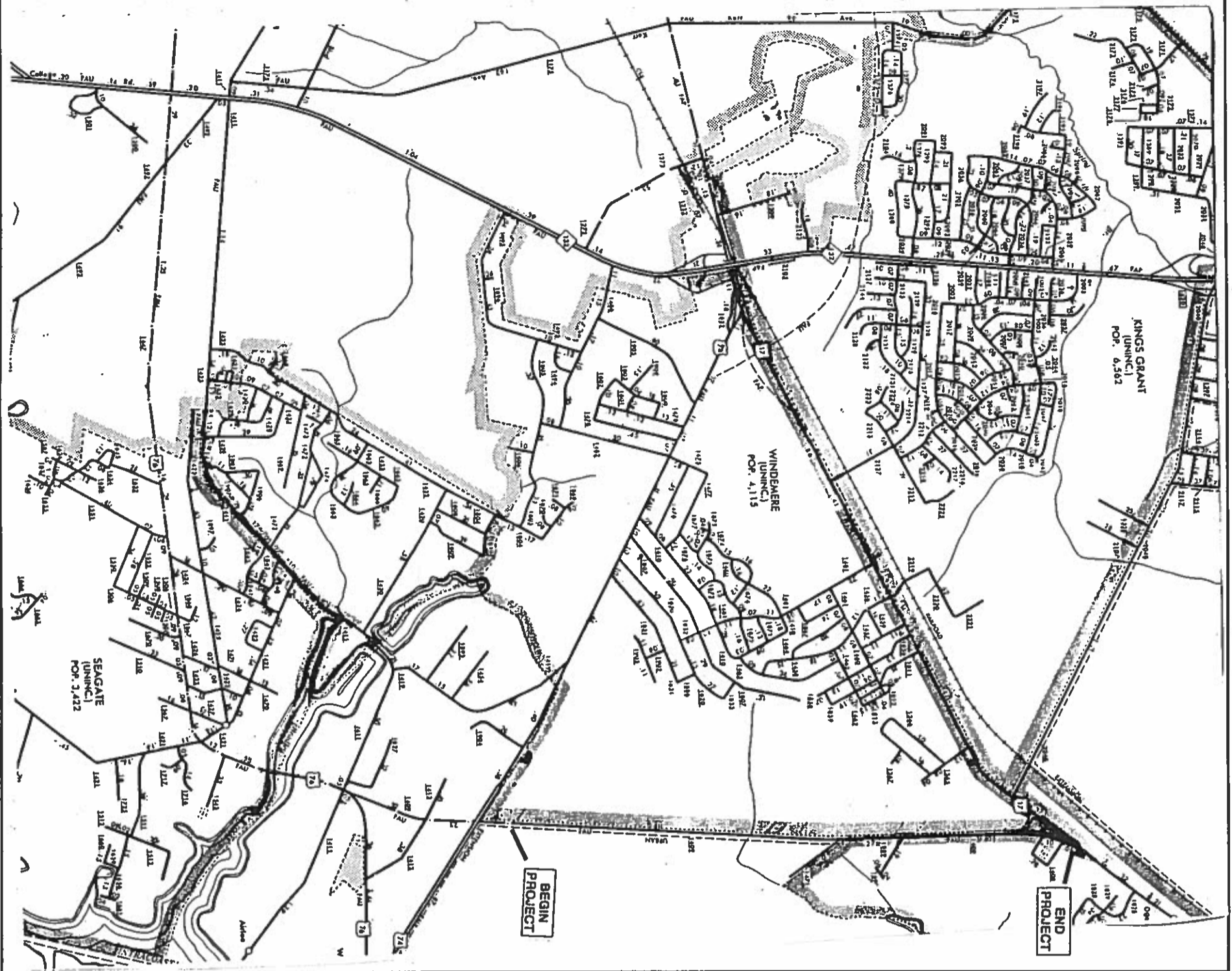
- 1) U-2572, feasibility study for the widening of US 76 to 5 lanes, from Bradley Creek bridge to SR 1409. Scheduled for right-of-way protection in the 1991-1997 TIP. This project would extend the existing multilane-lane section at the south terminal of this study to Bradley Creek.
- 2) U-2725, feasibility study for the extension of SR 2048 (Gordon Rd.) from US 17 to SR 1409. This project would create a signalized intersection with SR 1409, approximately 0.4 mile south of the US 17/SR 1409 intersection. Therefore, improvements to the US 17 intersection should be coordinated with project U-2725.

- 3) U-2733, feasibility study for the widening of US 74 from US 17 to SR 1409. The recommended improvements include widening the subject roadway to a 5-lane curb and gutter section.
- 4) A number of residential developments are planned adjacent to SR 1409. They include up to 2,500 units on the east side of SR 1409, and up to 7,000 units on the west side.

The Statewide Planning Unit recommended a median-divided typical cross-section for this improvement. This is to control turning traffic, and to carry through traffic efficiently as a part of the Wilmington eastern and southern loop. However, the median-divided section was not considered in this study since it would not accommodate left-turning traffic which will increase with the anticipated, and planned land development. Also, a median-divided section is not favored by the Division Engineer due to its relatively high maintenance requirements. It should be noted that the 1985 mutually adopted thoroughfare plan designates the US 17/ SR 1409 intersection as a site for a future interchange. While this may be justified by traffic demand, the ultimate intersection treatment will depend on the location of the Wilmington loop, and future development (also see feasibility study U-2725).

The project may impact wetlands along SR 1409, and may require a Corps of Engineers Section 404 permit. Also, a CAMA permit or a Consistency Determination will be required.

There are no recorded archaeological sites along the studied roadway. The project area was reconnoitered for historic architectural resources, without a documentary search. No potentially historic properties were identified.



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
DIVISION OF HIGHWAYS		
PROGRAM DEVELOPMENT BRANCH		
WILMINGTON		
SR-1409		
FROM US 76 TO US 17		
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U-2734		
DATE: 2-91	SCALE: 1" = 2 MILE	FIGURE: 1

